2875

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Application Number	09/631,067
Filing Date	August 1, 2000
First Named Inventor	Hajime Kamura
Art Unit	2875
Examiner Name	Bertrand Zeade
Attorney Docket Number	SEL 201

ENCLOSURES (*Check all that apply*)

- ☐ Fee Transmittal Form
- ☐ Fee Attached
- ☑ ~~Amendment/Reply~~ - Response
- ☐ After Final
- ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
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- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
- ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
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Remarks

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual	Stephen B. Heller
Signature	Stephen B. Heller
Date	June 17, 2003

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#11 Resp. 6/24/03 amw

PATENT
Attorney Docket No. SEL 201

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:
Hajime Kamura

Serial No.: 09/631,067

Filed: August 1, 2000

Examiner: Bertrand Zeade

Art Unit: 2875

For: FRONT LIGHT AND ELECTRONIC DEVICE

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Commissioner for Patents
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RESPONSE

Sir/Madam:

In response to the Office Action mailed March 17, 2003, in connection with the above-identified patent application, the following remarks are made in light thereof.

Claims 1-27 are pending in the application. Pursuant to the Office Action, claims 1, 3-4, 8-9, 12-13, 20 and 23 stand rejected under 35 USC §102 (b) as being anticipated by Beeson et al. 5,396,350. Claims 2, 5-7, 10-11, 14-19, 21-22, and 24-27 stand rejected under 35 USC §103 as being unpatentable over Zimmerman et al. 5,598,281 in view of Zimmerman et al. 5,555,109.

The present invention relates to a front light and an electronic device using the front light, for example, a liquid crystal device or optical sensor. In the case of a liquid crystal device in accordance with the present invention, when the front light is off, external light enters through a liquid crystal panel through a light guide plate and is reflected by the liquid crystal panel to

display an image. When the front light is turned on, the light from the light source is guided through the light guide plate into the liquid crystal panel. The light is reflected by the liquid crystal panel to display an image. The feature of the present invention resides in the particular configuration of the lenses located between the liquid crystal panel and the light guide plate. In particular, the present invention resides in the selection of the obtuse angle of the equally-sided trapezoidal cross-section of the prism-shaped lenses and the condition of the angle ψ_o of the cross-section of the rotational-body lenses or the prism-shaped lenses (like Fig. 7), in order to most effectively utilize the light both when the light source is off and on.

Turning to the rejection of claims 1, 3-4, 8-9, 12-13, 20 and 23, the Examiner alleges that Beeson et al. disclose a plurality of prism-shaped lenses each being in contact with a lower surface of the light guide plate. However, as is shown in Fig. 2, for example, Beesom et al. teach adhesion promoting layers 22 and 26 with a substrate 24 interposed therebetween, a plurality of microprisms 28, and an upper surface of the waveguide 6 (which Applicant understands corresponds to the claimed light guide). For this reason, Applicant believes that Beeson et al. do not teach the claimed limitation of the plurality of prism-shaped lenses with each in contact with a lower surface of the light guide plate. Thus, claims 1, 3-4, 8-9, 12-13, 20 and 23 cannot be anticipated by Beeson et al.

Moreover, it should be noted that in the above cited references the prism-shaped lenses are used for a liquid crystal panel with a back light, while the rejected claims clearly recite a front light. The claimed prism-shaped lenses are used both for introducing the light from the light source and the external light when the light source is turned off. On the other hand, the prism-shaped lenses of the cited references are used only for introducing the light from the back light, but not for introducing the external light. Since the purpose of the present invention is to

most effectively utilize the light both when the light source is off and on, the above cited references are irrelevant to the present invention.

Turning more specifically to the rejection of claims 2, 5-7, 10-11, 14-19, 21-22, and 24-27, the Examiner alleges that Zimmerman et al. ('281) discloses a plurality of prism-shaped lenses each being in contact with a lower surface of the light guide plate, referring to Figs. 6-9. However, it appears that Zimmerman et al. does not disclose a plurality of prism-shaped lenses each being in contact with a lower surface of the light guide plate. Furthermore, Zimmerman et al. ('109), in Fig. 4, teaches an optical adhesion promoting layer 26 interposed between the plurality of microprisms 90 and the waveguide 16. For this reason, Applicant believes that Zimmerman et al. do not teach the claimed limitation that the plurality of prism-shaped lenses each be in contact with a lower surface of the light guide plate, and that these two references are irrelevant to the present invention.

For the foregoing reasons, Applicant respectfully requests the Examiner to reconsider and withdraw his rejection of the pending claims and to allow this application.

Respectfully submitted,

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